

WHAT IS CLAIMED IS:

1. A charge management method applied to a charge management system connected to a network
5 connected to at least one or more user terminals, and including monitoring unit, distributing unit and accounting unit, comprising:
monitoring appliances configuring the network;
distributing a content to the user terminal;
10 and
calculating a accounting information for the user terminal on the basis of a content distribution situation; and
wherein the distributing includes dynamically
15 changing a resolution rate of the content on the basis of a monitored result in the monitoring, and
the calculating includes calculating the accounting information on the basis of the changed resolution rate of the content.
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2. A charge management method according to claim 1, wherein the charge management system includes permitting unit connected to the network, further comprising:
25 determining whether a distribution of the content to the user terminal is permitted or not,
wherein the monitoring includes monitoring a

content distribution condition affecting the content distribution, such as a change in a using band of the network, a fault situation of a port managed for every appliance, etc., and transmitting, in case the
5 content distribution condition changes, change information thereof to the permitting unit; and
indicating the distributing unit to change the resolution rate on the basis of the change information.

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3. A charge management method according to claim 2, wherein the indicating includes selecting the content distributed on a route shown by the change information and indicating the distributing
15 unit to adjust a resolution rate of the selected content.

4. A charge management method according to claim 2, wherein the distributing includes changing
20 the resolution rate through a dynamic resolution conversion (DRC: Dynamic Resolution Conversion) based on an adjustment request received from the permitting unit for ensuring a continuity of a service by adjusting a traffic quantity of the content
25 distribution, preventing a disturbance of picture and keeping a condition worth listening to and watching, and

further comprising first transmitting to the permitting unit, resolution rate information of the content with its resolution rate changed and distribution destination user identifying information.

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5. A charge management method according to claim 2, further comprising second transmitting, when the distribution of the content is ended, the resolution rate change information and the distribution destination user identifying information to the permitting unit.

6. A charge management method according to claim 2, further comprising third transmitting, when receiving the resolution rate change information through the dynamic resolution conversion which has been transmitted from the distributing unit, the resolution rate information to the monitoring unit.

7. A charge management method according to claim 2, further comprising fourth transmitting, triggered by the end of the content distribution, to the monitoring unit the resolution rate information and the distribution destination user identifying information that have been received from the distributing unit.

8. A charge management method according to claim 2, wherein the distributing includes receiving an adjustment request from the permitting unit and changing the encoding system through the dynamic
5 encoding conversion from the information thereof, for ensuring the continuity of the service by adjusting a traffic quantity of the content distribution, preventing the disturbance of picture, and keeping the condition worth listening to and watching.

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9. A charge management method according to claim 1, wherein the calculating includes accumulating a degree of discount based on a decrease
quantity of the resolution rate and a distribution
15 time in a decreased state, converting the degree of discount into a discount rate on a charge collection unit such as per end of month, etc., and calculating the accounting information by multiplying a standard charge by the discount rate.

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10. A charge device connected to a charge management system which comprises at least one or more user terminals, monitoring unit monitoring appliances configuring a network, and distributing
25 unit distributing a content to the user terminal, and wherein the distributing unit dynamically changes a resolution rate of the content on the basis

of a result of the monitoring by the monitoring unit,
comprising:

accumulating unit accumulating a degree of
discount based on a decrease quantity of the
5 resolution rate and a distribution time in a
decreased state;

converting unit converting the degree of
discount into a discount rate on a charge collection
unit such as per end of month, etc.; and

10 calculating unit calculating an accounting
information by multiplying a standard charge by the
discount rate.

11. A network monitor device connected to a
15 charge management system which comprises at least one
or more user terminals, distributing unit
distributing a content to the user terminal,
accounting unit calculating accounting information
for the user terminal on the basis of a content
20 distributing situation, and permitting unit for
determining whether the distribution of the content
to the user terminal is permitted or not,

wherein the distributing unit dynamically
changes a resolution rate of the content, and
25 the accounting unit calculates the accounting
information on the basis of the changed resolution
rate of the content, comprising:

monitoring unit monitoring a content
distribution condition affecting the content
distribution, such as a change in a using band of the
network, a fault situation of a port managed for
5 every appliance, etc.; and

transmitting unit transmitting, in case the
content distribution condition changes, change
information thereof to the permitting unit; and

wherein the permitting unit indicates the
10 distributing unit to change the resolution rate on
the basis of the received change information.

12. A network monitor device according to
claim 11, further comprising

15 first receiving unit receiving the resolution
rate information, which is transmitted by the
permitting unit when the permitting unit receives the
resolution rate change information through the
dynamic resolution conversion from the distributing
20 unit.

13. A network monitor device according to
claim 11, further comprising

second receiving unit receiving the resolution
25 rate information and the distribution destination
user identifying information, that the permitting
unit have been received from the distributing unit,

from the permitting unit, triggered by the end of the content distribution.

14. A Web portal server connected to a charge
5 management system which comprises at least one or
more user terminals, monitoring unit monitoring
appliances configuring a network, distributing unit
distributing a content to the user terminal, and
accounting unit calculating accounting information
10 for the user terminal on the basis of a content
distributing situation, wherein the distributing unit
dynamically changes a resolution rate of the content
on the basis of a result of the monitoring by the
monitoring unit, the accounting unit calculates the
15 accounting information on the basis of the changed
resolution rate of the content, and the monitoring
unit monitors a content distribution condition
affecting the content distribution, such as a change
in a using band of the network, a fault situation of
20 a port managed for every appliance, etc., and
transmits, in case the content distribution condition
changes, the change information thereof, and
determining whether the distribution of the content
to the user terminal is permitted or not, comprising:
25 selecting unit selecting the content
distributed on a route shown by the change
information; and

indicating unit indicating the distributing unit to adjust a resolution rate of the selected content.

5 15. A Web portal server according to claim 14,
 wherein the indication of the indicating unit
 makes the distributing unit changed the resolution
 rate through a dynamic resolution conversion (DRC:
 Dynamic Resolution Conversion), for ensuring a
10 continuity of a service by adjusting a traffic
 quantity of the content distribution, preventing a
 disturbance of picture and keeping a condition worth
 listening to and watching, and
 the distributing unit transmits, to the Web
15 portal server, resolution rate information of the
 content with its resolution rate changed and
 distribution destination user identifying information.

 16. A Web portal server according to claim 14,
20 further comprising
 receiving unit receiving a resolution rate
 change information and a distribution destination
 user identifying information, which is transmitted
 from the distributing unit when the distribution of
25 the content is ended.

 17. A Web portal server according to claim 14,

further comprising first transmitting unit
transmitting, when receiving a resolution rate change
information through the dynamic resolution conversion
which has been transmitted from the distributing unit,
5 the resolution rate information to the monitoring
unit.

18. A Web portal server according to claim 14,
further comprising second transmitting unit
10 transmitting, triggered by the end of the content
distribution, the resolution rate information and the
distribution destination user identifying information,
that have been received from the distributing unit,
to the monitoring unit.

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19. A Web portal server according to claim 14,
wherein the indication of the indicating unit makes
the distributing unit changed the encoding system
through the dynamic encoding conversion from the
20 received information of the indication, for ensuring
the continuity of the service by adjusting a traffic
quantity of the content distribution, preventing the
disturbance of picture and keeping the condition
worth listening to and watching.

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20. A charge management program applied to a
Web portal server connected to a charge management

system which comprises at least one or more user terminals, monitoring unit monitoring appliances configuring a network, distributing unit distributing a content to the user terminal, and accounting unit
5 calculating accounting information for the user terminal on the basis of a content distributing situation, wherein the distributing unit dynamically changes a resolution rate of the content on the basis of a result of the monitoring by the monitoring unit,
10 the accounting unit calculates the accounting information on the basis of the changed resolution rate of the content, and the monitoring unit monitors a content distribution condition affecting the content distribution, such as a change in a using
15 band of the network, a fault situation of a port managed for every appliance, etc., and transmits, in case the content distribution condition changes, the change information thereof, and determining whether the distribution of the content to the user terminal
20 is permitted or not, comprising:

making the Web portal server functioned as selecting unit selecting the content distributed on a route shown by the change information; and

making the Web portal server functioned as
25 indicating unit indicating the distributing unit to adjust a resolution rate of the selected content.

21. A charge management program according to claim 20,

wherein the indication of the indicating unit makes the distributing unit changed the resolution rate through a dynamic resolution conversion (DRC: Dynamic Resolution Conversion), for ensuring a continuity of a service by adjusting a traffic quantity of the content distribution, preventing a disturbance of picture and keeping a condition worth listening to and watching, and

the distributing unit transmits, to the Web portal server, resolution rate information of the content with its resolution rate changed and distribution destination user identifying information.

22. A charge management program according to claim 20, further comprising

making the Web portal server functioned as receiving unit receiving a resolution rate change information and a distribution destination user identifying information, which is transmitted from the distributing unit when the distribution of the content is ended.

23. A charge management program according to claim 20, further comprising

making the Web portal server functioned as

first transmitting unit transmitting, when receiving
a resolution rate change information through the
dynamic resolution conversion which has been
transmitted from the distributing unit, the
5 resolution rate information to the monitoring unit.

24. A charge management program according to
claim 20, further comprising
making the Web portal server functioned as
10 second transmitting unit transmitting, triggered by
the end of the content distribution, the resolution
rate information and the distribution destination
user identifying information that have been received
from the distributing unit to the monitoring unit.

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25. A charge management program according to
claim 20,
wherein the indication of the indicating unit
makes the distributing unit changed the encoding
20 system through the dynamic encoding conversion from
the received information of the indication, for
ensuring the continuity of the service by adjusting a
traffic quantity of the content distribution,
preventing the disturbance of picture and keeping the
25 condition worth listening to and watching.

26. A content distribution server connected to

a charge management system which comprises at least
one or more user terminals, monitoring unit
monitoring appliances configuring a network, and
accounting unit calculating accounting information
5 for the user terminal on the basis of a content
distributing situation and permitting unit for
determining whether the distribution of the content
to the user terminal is permitted or not, and
distributing a content to the user terminal,
10 comprising:

first changing unit changing dynamically a
resolution rate of the content on the basis of a
result of the monitoring by the monitoring unit, and
wherein the accounting unit calculates the
15 accounting information on the basis of the changed
resolution rate of the content, and

the monitoring unit monitors a content
distribution condition affecting the content
distribution, such as a change in a using band of the
20 network, a fault situation of a port managed for
every appliance, etc., and transmits, in case the
content distribution condition changes, change
information thereof to the permitting unit; and

first receiving unit receiving indication of
25 change the resolution rate on the basis of the change
information from the permitting unit.

27. A content distribution server according to claim 26, further comprising

second receiving unit receiving indication of adjustment a resolution rate of the selected content
5 transmitted from the permitting unit, that the permitting unit selects the content distributed on a route shown by the change information.

28. A content distribution server according to
10 claim 26, further comprising:

first changing unit changing, based on an adjustment request received from the permitting unit, the resolution rate through a dynamic resolution conversion (DRC: Dynamic Resolution Conversion), for
15 ensuring a continuity of a service by adjusting a traffic quantity of the content distribution, preventing a disturbance of picture and keeping a condition worth listening to and watching; and

first transmitting unit transmitting, to the
20 permitting unit, resolution rate information of the content with its resolution rate changed and distribution destination user identifying information.

29. A content distribution server according to
25 claim 26, further comprising

second transmitting unit transmitting, when the distribution of the content is ended, the resolution

rate change information and the distribution destination user identifying information to the permitting unit.

5 30. A content distribution server according to claim 26, wherein the resolution rate change information through the dynamic resolution conversion which has been transmitted from the content distribution server makes the permitting unit
10 transmitted, when the permitting unit received the resolution rate change information through the dynamic resolution conversion, the resolution rate information to the monitoring unit.

15 31. A content distribution server according to claim 26, wherein the resolution rate information and distribution destination user identifying information of the content transmitted to the permitting unit from the content distribution server is transmitted
20 to the monitoring unit, triggered by the end of the content distribution, by the permitting unit.

 32. A content distribution server according to claim 26, further comprising
25 second changing unit changing the encoding system through the dynamic encoding conversion from information of adjustment request received from the

permitting unit, for ensuring the continuity of the service by adjusting a traffic quantity of the content distribution, preventing the disturbance of picture and keeping the condition worth listening to
5 and watching.

33. A charge management program applied to a content distribution server connected to a charge management system which comprises at least one or
10 more user terminals, monitoring unit monitoring appliances configuring a network, and accounting unit calculating accounting information for the user terminal on the basis of a content distributing situation and permitting unit for determining whether
15 the distribution of the content to the user terminal is permitted or not, and distributing a content to the user terminal, comprising:

making the content distribution server functioned as first changing unit changing
20 dynamically a resolution rate of the content on the basis of a result of the monitoring by the monitoring unit, and

wherein the accounting unit calculates the accounting information on the basis of the changed
25 resolution rate of the content, and

the monitoring unit monitors a content distribution condition affecting the content

distribution, such as a change in a using band of the network, a fault situation of a port managed for every appliance, etc., and transmits, in case the content distribution condition changes, change
5 information thereof to the permitting unit; and

making the content distribution server functioned as first receiving unit receiving indication of change the resolution rate on the basis of the change information from the permitting unit.
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34. A charge management program according to claim 33, further comprising
making the content distribution server functioned as second receiving unit receiving
15 indication of adjustment a resolution rate of the selected content transmitted from the permitting unit, that the permitting unit selects the content distributed on a route shown by the change information.

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35. A charge management program according to claim 33, further comprising:
making the content distribution server functioned as first changing unit changing, based on
25 an adjustment request received from the permitting unit, the resolution rate through a dynamic resolution conversion (DRC: Dynamic Resolution

Conversion), for ensuring a continuity of a service
by adjusting a traffic quantity of the content
distribution, preventing a disturbance of picture and
keeping a condition worth listening to and watching;
5 and

making the content distribution server
functioned as first transmitting unit transmitting,
to the permitting unit, resolution rate information
of the content with its resolution rate changed and
10 distribution destination user identifying information.

36. A charge management program according to
claim 33, further comprising

making the content distribution server
15 functioned as second transmitting unit transmitting,
when the distribution of the content is ended, the
resolution rate change information and the
distribution destination user identifying information
to the permitting unit.

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37. A charge management program according to
claim 33, wherein the resolution rate change
information through the dynamic resolution conversion
which has been transmitted from the content
25 distribution server makes the permitting unit
transmitted, when the permitting unit received the
resolution rate change information through the

dynamic resolution conversion, the resolution rate information to the monitoring unit.

38. A charge management program according to
5 claim 33, wherein the resolution rate information and distribution destination user identifying information of the content transmitted to the permitting unit from the content distribution server is transmitted to the monitoring unit, triggered by the end of the
10 content distribution, by the permitting unit.

39. A charge management program according to claim 33, further comprising
making the content distribution server
15 functioned as second changing unit changing the encoding system through the dynamic encoding conversion from information of adjustment request received from the permitting unit, for ensuring the continuity of the service by adjusting a traffic
20 quantity of the content distribution, preventing the disturbance of picture, and keeping the condition worth listening to and watching.

40. A charge management system comprising:
25 at least one or more user terminals;
monitoring unit monitoring appliances
configuring a network;

distributing unit distributing a content to the user terminal; and

accounting unit calculating accounting information for the user terminal on the basis of a
5 content distributing situation,

wherein the distributing unit dynamically changes a resolution rate of the content on the basis of a result of the monitoring by the monitoring unit, and

10 the accounting unit calculates the accounting information on the basis of the changed resolution rate of the content.

41. A charge management system according to
15 claim 40, further comprising permitting unit determining whether the distribution of the content to the user terminal is permitted or not,

wherein the monitoring unit monitors a content distribution condition affecting the content
20 distribution, such as a change in a using band of the network, a fault situation of a port managed for every appliance, etc., and transmits, in case the content distribution condition changes, change information thereof to the permitting unit, and

25 the permitting unit indicates the distributing unit to change the resolution rate on the basis of the received change information.

42. A charge management system according to claim 41, wherein the permitting unit selects the content distributed on a route shown by the change
5 information and indicates the distributing unit to adjust a resolution rate of the selected content.

43. A charge management system according to claim 41, wherein the distributing unit, based on the
10 adjustment request received from the permitting unit, changing the resolution rate through a dynamic resolution conversion (DRC: Dynamic Resolution Conversion), for ensuring a continuity of a service by adjusting a traffic quantity of the content
15 distribution, preventing a disturbance of picture and keeping a condition worth listening to and watching, and

transmitting to the permitting unit, resolution rate information of the content with its resolution
20 rate changed and distribution destination user identifying information.

44. A charge management system according to claim 41, wherein the distributing unit transmits,
25 when the distribution of the content is ended, the resolution rate change information and the distribution destination user identifying information

to the permitting unit.

45. A charge management system according to claim 41, wherein the permitting unit transmits, when
5 receiving the resolution rate change information through the dynamic resolution conversion which has been transmitted from the distributing unit, the resolution rate information to the monitoring unit.

10 46. A charge management system according to claim 41, wherein the permitting unit transmits, triggered by the end of the content distribution, to the monitoring unit the resolution rate information and the distribution destination user identifying
15 information that have been received from the distributing unit.

47. A charge management system according to claim 41, wherein the distributing unit receiving an
20 adjustment request from the permitting unit and changing the encoding system through the dynamic encoding conversion from the information thereof, for ensuring the continuity of the service by adjusting a traffic quantity of the content distribution,
25 preventing the disturbance of picture, and keeping the condition worth listening to and watching.

48. A charge management system according to claim 40, wherein the accounting unit accumulates a degree of discount on the basis of a decrease quantity of the resolution rate and a distribution
5 time in a decreased state, converts the degree of discount into a discount rate on a charge collection unit such as per end of month, etc., and calculates the accounting information by multiplying a standard charge by the discount rate.